

What is claimed is:

- 1     1.     An electrical connector connectable to a printed circuit board on one end, which  
2     comprises:  
3         an insulative housing;  
4         a plurality of insulative posts disposed in the insulative housing, the insulative  
5     posts arranged in at least one row;  
6         each of the insulative posts having a first side and a second side, and the  
7     insulative posts extending in a direction away from the printed circuit board;  
8         a plurality of signal conductors, with each signal conductor having a first contact  
9     end connectable to the printed circuit board, a second contact end, and an intermediate  
10    portion therebetween that is disposed in the insulative housing, wherein the signal  
11    conductors are disposed along the first side of the insulative posts; and  
12         a plurality of ground conductors, with each ground conductor having a first  
13    contact end connectable to the printed circuit board, a second contact end, and an  
14    intermediate portion therebetween that is disposed in the insulative housing, wherein the  
15    ground conductors are disposed along the second side of the insulative posts such that the  
16    signal conductors and the ground conductors are electrically isolated from one another.
- 1     2.     The electrical connector of claim 1, wherein the insulative posts of each row are  
2     attached to one another and the insulative housing includes a plurality of openings that  
3     receive the insulative posts.

1     3.     The electrical connector of claim 1, which further comprises:  
2           the insulative housing having first attachment features;  
3           a second insulative housing having second attachment features;  
4           a plurality of second insulative posts disposed in the second insulative housing,  
5     the second insulative posts arranged in at least one row;  
6           each of the second insulative posts having a first side and a second side, and the  
7     second insulative posts extending in a direction away from the printed circuit board;  
8           a plurality of second signal conductors, with each second signal conductor having  
9     a first contact end connectable to the printed circuit board, a second contact end, and an  
10    intermediate portion therebetween that is disposed in the second insulative housing,  
11    wherein the second signal conductors are disposed along the first side of the second  
12    insulative posts;  
13           a plurality of second ground conductors, with each second ground conductor  
14    having a first contact end connectable to the printed circuit board, a second contact end,  
15    and an intermediate portion therebetween that is disposed in the second insulative  
16    housing, wherein the second ground conductors are disposed along the second side of the  
17    second insulative posts such that the second signal conductors and the second ground  
18    conductors are electrically isolated from one another; and  
19           a stiffener holding the insulative housing and the second insulative housing by the  
20    first and second attachment features.

1 4. The electrical connector of claim 1, wherein each of the insulative posts includes  
2 a first groove on the first side for receiving the corresponding signal conductor and a  
3 second groove on the second side for receiving the corresponding ground conductor.

1 5. The electrical connector of claim 1, which further comprises a second plurality of  
2 signal conductors disposed in the insulative housing to provide differential pairs of  
3 signals.

1 6. The electrical connector of claim 1, wherein the intermediate portion of each  
2 ground conductor has a surface with a first edge and a second edge, at least one of the  
3 first edge or the second edge being bent such that when the signal conductors are  
4 disposed along the first side of the insulative posts and the ground conductors are  
5 disposed along the second side of the insulative posts, the bent edge of the ground  
6 conductor intermediate portion is directed toward the corresponding signal conductor.

1 7. The electrical connector of claim 6, wherein the bent edge of the ground  
2 conductors is substantially perpendicular to the surface of the ground conductors.

1 8. The electrical connector of claim 1, wherein the first contact end of the ground  
2 conductors comprises at least two contact tails and the first contact end of the signal  
3 conductors comprises a contact tail, the contact tails of the ground conductors and the  
4 signal conductors configured to be connectable to the printed circuit board.

1 9. The electrical connector of claim 8, wherein for each row of the insulative posts,  
2 the contact tails of the ground conductors and the signal conductors are aligned along a  
3 line for attachment to the printed circuit board.

1 10. The electrical connector of claim 8, wherein the contact tails of the ground  
2 conductors and the signal conductors are press-fit contact tails.

1 11. The electrical connector of claim 8, wherein the contact tails of the ground  
2 conductors and the signal conductors are pressure mount contact tails.

1 12. The electrical connector of claim 8, wherein the contact tails of the ground  
2 conductors and the signal conductors comprise contact pads adapted for soldering to the  
3 printed circuit board.

1 13. The electrical connector of claim 8, wherein the contact tails of the ground  
2 conductors and the signal conductors are adapted for paste-in-hole solder attachment to  
3 the printed circuit board.

1 14. An electrical connector connectable to a printed circuit board on one end, which  
2 comprises:  
3 an insulative housing;

4 a plurality of signal conductors, with each signal conductor having a first contact  
5 end connectable to the printed circuit board, a second contact end, and an intermediate  
6 portion therebetween that is disposed in the insulative housing;

7 a plurality of ground conductors with each ground conductor corresponding to  
8 one of the plurality of signal conductors, each ground conductor having a first contact  
9 end connectable to the printed circuit board, a second contact end, and an intermediate  
10 portion therebetween that is disposed in the insulative housing; and

11 the intermediate portion of each ground conductor having a surface with a first  
12 edge and a second edge, at least one of the first edge or the second edge being bent such  
13 that when the signal conductors and the corresponding ground conductors are disposed in  
14 the insulative housing, the bent edge of the ground conductor intermediate portion is  
15 directed toward the corresponding signal conductor to provide shielding.

1 15. The electrical connector of claim 14, which further comprises:

2 a plurality of insulative posts disposed in the insulative housing, with each of the  
3 insulative posts having a first side and a second side, and the insulative posts extending in  
4 a direction away from the printed circuit board; and

5 the plurality of signal conductors being disposed along the first side of the  
6 insulative posts and the plurality of ground conductors being disposed along the second  
7 side of the insulative posts.

1 16. The electrical connector of claim 15, wherein each of the insulative posts includes  
2 a first groove on the first side for receiving the corresponding signal conductor and a  
3 second groove on the second side for receiving the corresponding ground conductor.

1 17. The electrical connector of claim 14, which further comprises a second plurality  
2 of signal conductors disposed in the insulative housing to provide differential pairs of  
3 signals.

1 18. The electrical connector of claim 14, wherein the first contact end of the ground  
2 conductors comprises at least two contact tails and the first contact end of the signal  
3 conductors comprises a contact tail, the contact tails of the ground conductors and the  
4 signal conductors configured to be connectable to the printed circuit board.

1 19. The electrical connector of claim 18, wherein the contact tails of the ground  
2 conductors and the signal conductors are press-fit contact tails.

1 20. The electrical connector of claim 18, wherein the contact tails of the ground  
2 conductors and the signal conductors are pressure mount contact tails.

1 21. The electrical connector of claim 18, wherein the contact tails of the ground  
2 conductors and the signal conductors comprise contact pads adapted for soldering to the  
3 printed circuit board.

1 22. The electrical connector of claim 18, wherein the contact tails of the ground  
2 conductors and the signal conductors are adapted for paste-in-hole solder attachment to  
3 the printed circuit board.

1 23. An electrical connector assembly including a first electrical connector mateable to  
2 a second electrical connector, which comprises:

3 the first electrical connector connectable to a first printed circuit board and  
4 including a plurality of wafers aligned in parallel, wherein each of the wafers comprises:

5 a first insulative housing;

6 a plurality of first signal conductors, with each first signal conductor  
7 having a first contact end connectable to the first printed circuit board, a second  
8 contact end mateable to the second electrical connector, and an intermediate  
9 portion therebetween that is disposed in the first insulative housing;

10 a plurality of shield strips, with each shield strip having a first contact end  
11 connectable to the first printed circuit board, a second contact end mateable to the  
12 second electrical connector, and an intermediate portion therebetween that is  
13 disposed in the first insulative housing adjacent one of the plurality of first signal  
14 conductors;

15 each intermediate portion of the shield strip having a surface with a first  
16 edge and a second edge, at least one of the first edge or the second edge being  
17 bent such that when the plurality of first signal conductors and the corresponding  
18 shield strips are disposed in the first insulative housing, the bent edge of the  
19 intermediate portion is directed toward the corresponding first signal conductor;

20

21 the second electrical connector connectable to a second printed circuit board and

22 comprising:

23 a second insulative housing;

24 a plurality of insulative posts disposed in the second insulative housing,

25 the insulative posts arranged in rows corresponding to the wafers of the first

26 electrical connector;

27 each of the insulative posts having a first side and a second side, and the

28 insulative posts extending in the direction of the first electrical connector when

29 the first and second electrical connectors are mated;

30 a plurality of second signal conductors, with each second signal conductor

31 having a first contact end connectable to the second printed circuit board, a

32 second contact end mateable to the first electrical connector, and an intermediate

33 portion therebetween that is disposed in the second insulative housing, wherein

34 the second signal conductors are disposed along the first side of the insulative

35 posts; and

36 a plurality of ground conductors, with each ground conductor having a

37 first contact end connectable to the second printed circuit board, a second contact

38 end mateable to the first electrical connector, and an intermediate portion

39 therebetween that is disposed in the second insulative housing, wherein the

40 ground conductors are disposed along the second side of the insulative posts such

41 that the second signal conductors and the ground conductors are electrically

42 isolated from one another.



1     24.     The electrical connector assembly of claim 23, wherein:

2             the first contact end of the shield strips comprises at least two contact tails and the  
3     first contact end of the first signal conductors comprises a contact tail, the contact tails of  
4     the shield strips and the first signal conductors configured to be connectable to the first  
5     printed circuit board; and

6             the first contact end of the ground conductors comprises at least two contact tails  
7     and the first contact end of the second signal conductors comprises a contact tail, the  
8     contact tails of the ground conductors and the second signal conductors configured to be  
9     connectable to the second printed circuit board.

1     25.     The electrical connector assembly of claim 23, which further comprises:

2             each of the wafers of the first electrical connector having a plurality of third signal  
3     conductors, with each third signal conductor having a first contact end, a second contact  
4     end, and an intermediate portion therebetween that is disposed in the first insulative  
5     housing, wherein the first signal conductors and the third signal conductors are positioned  
6     in the first insulative housing to form differential pairs of signals; and

7             the second electrical connector having a plurality of fourth signal conductors, with  
8     each fourth signal conductor having a first contact end, a second contact end, and an  
9     intermediate portion therebetween that is disposed in the second insulative housing,  
10     wherein the second signal conductors and the fourth signal conductors are positioned in  
11     the second insulative housing to form differential pairs of signals.